Shifting Vistas

Legal Writing in the Electronic Age—Part 1

By Charles T. Frazier, Jr.

With the advent of e-filing and electronic-document-management systems, the number of judges who read documents by computer instead of paper continues to increase. At least 33 states offer or require electronic filing. And *every* federal circuit court of appeals—and over 50 percent of state appellate courts—issue tablets to their judges. ABA Council of Appellate Lawyers, *The Leap from E-Filing to E-Briefing* 3, 8–11 (2017) (CAL Rpt.).

Will screen reading affect the way judges read legal arguments, and in turn, affect the way attorneys present arguments in appellate briefs and motions? Yes! If attorneys wish to communicate effectively to the electronic reader, they must reassess how they write and consider new ways of communicating their arguments.

How Screens Have Changed Reading

Research has revealed that people read and retain information differently when reading electronic texts because material differences exist between the reading environment of digital and print media: "Because we literally and physiologically can read in multiple ways, how we read—and what we absorb from our reading—will be influenced by both the content of our reading and the medium we use."

Maryanne Wolf, *Our "Deep Reading" Brain: Its Digital Evolution Poses Questions*, Nieman Reports (Summer 2010), *quoted in* Anne Niccoli, *Paper or Tablet? Reading Recall and Comprehension*, Educause Review Online (Sept. 28, 2015). Understanding why screen readers read and retain differently is critical to knowing how to communicate to them. Certain studies, discussed below, have helped explain the effect that the screen-reading environment has on screen reading.

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Navigating Long Texts on Screens Is More Challenging

Studies have shown that screens are more difficult to read than paper. When we read word for word, we read 10 to 30 percent more slowly on screens than paper. Sri H. Kurniawan & Panayiotis Zaphiris, Reading Online or on Paper: Which is Faster? (Wayne State Univ. Aug. 2001) (unpublished manuscript).

Why is this so? Technology writer John Freeman suggests that the difference has to do with *light*. John Freeman, *The Tyranny of E-mail: The Four-Thousand-Year Journey to Your Inbox* 15 (2009). He notes that the human eye evolved to see the world by *reflected* light; it is not designed to look directly *at* a light source. Thus, we see most of the world using reflected light. An electronic device presents a relatively new exception. A computer screen shines light directly into our eyes. *Id.* It dries the eyes, increases blink rate, and creates headaches. *Id.*

Because there is physicality to reading, the brain perceives the entirety of a text "as a kind of physical landscape," and readers often locate particular information that they have read by recalling where it was located in the text. Ferris Jabr, *The Reading Brain in the Digital Age: The Science of Paper Versus Screens*, Scientific American (Apr. 11, 2013).

Paper readers, especially when reading books, are reading in a clear, physical domain: two pages, eight corners, and a "feel" for the paper, which the reader leaves for a new vista by turning the page. *Id.* Paper readers read left to right, down the page, concentrating on one text at a time, doing only one task: reading. *Id.*

Screens, on the other hand, "interfere with intuitive navigation of a text and inhibit people from mapping the journey in their minds." *Id.* The screen only displays one virtual page, disappearing as the reader clicks for the next screen, or scrolls or jumps to another part of the text. Even with page numbers and headers, "it is difficult to see any one passage in the context of the entire text." *Id.*

The relative ease in navigating paper texts enables better absorption and therefore greater comprehension than reading screen texts. Studies have shown that the "spatio-temporal markers" that paper provides—touching paper and turning pages—"aids the memory, making it easier to remember where you read something."

Caroline Myrberg & Ninna Wiberg, *Screen vs. Paper: What Is the Difference for Reading and Learning?*, Insights, 28(2), at 49–54 (2015). The necessity of scrolling on a computer screen makes it more difficult to recall the substance of the text. *Id.*

In addition to Freeman's study on the effect of light from a screen, other studies have suggested that the low "physicality" of the screen increases the effort required to read screen text, especially if it is long. For example, one Swedish study revealed that screen readers reported higher levels of stress and tiredness, resulting in lower comprehension. Jabr, *supra.* Another study found that readers who had to scroll through continuous text recalled less than readers who flipped pages. *Id.* Again, researchers reasoned that scrolling requires more mental reserves because scrolling demands that the reader focus on the text and how he or she is moving it; in contrast, turning or clicking a page "are simpler and more automatic gestures." *Id.*

Why would the physical qualities of paper matter? Some researchers have concluded that qualities of words on a physical page help readers remember and find their location and content better. The four corners of a page "make it easier to form a coherent mental map of the text." *Id.* And compared with others who read on a Kindle, one study found that "people who read on paper were much better at reconstructing the plot of the story." Annie Sneed, *Everything Science Knows About Reading on Screens,* Fast Company (July 8, 2015). The researcher who conducted the study hypothesized that the tactile feedback of paper may help people process certain information when they read.

Screen Readers Skim Over Text; They Don't Read It

Studies have shown that reading from a screen has changed the very mechanics of reading. Screen readers spend more time "browsing and scanning, keyword spotting, one-time reading, non-linear reading, and reading more selectively." Sneed, *supra.* They don't read every word; they *skim* the text, focusing on only a portion of the page to gather what they want. Robert Dubose, *Legal Writing for the Rewired Brain: Persuading Readers in a Paperless World* 40–41 (2010).

Eye-tracking studies have shown that screen readers are more likely to focus on certain portions of the page, typically the top of the page, headings, the first line or two of paragraphs, and the text in a narrow band on the left side of the page running from top to bottom.

Some words on the page were not read by any subjects. Studies have found the same sort of pattern not only in the way that people read websites, but also in the way that they read other types of online texts, such as newsletters. The areas which have the most eye contact equates to an "F" pattern on each page, leading to the so-called "F pattern." Jakob Nielsen, *F-Shaped Pattern for Reading Web Content,* Nielsen Norman Group (Apr. 17, 2006).

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Web designers have learned that a visible text structure takes advantage of these patterns and enables rapid-information gathering. For legal writers, the lesson is that visible structure is crucial for our readers to understand our primary arguments and quickly see the structure of an argument's logic.

The F pattern suggests that screen readers are more likely to do the following:

- *Look for headings and summaries* of content.
- *Read the first paragraph* of a text more thoroughly than the rest of the text.
- *Read the first sentence* of a paragraph, but skim the rest of the paragraph.
- *Look for structural cues* down the left side of the page.

See id.

Another lesson of the F pattern is that screen readers usually do not read thoroughly. In the study completed by the Nielsen Norman Group, almost none of the readers read all of the words on the screen. When words are located toward the end of a paragraph, further down the page, or further to the right, they are less likely to be read. *Id.*

This switch to skimming results from the nature of the computer-reading environment. Computer readers are in a hurry. Steve Krug, *Don't Make Me Think* 22 (2d ed., 2006). The internet provides an unlimited amount of information at a click, and readers simply do not have enough time to read it all. Skimming is not caused by laziness. It is a necessary adaptation to handle the information explosion and the demands of screen reading. Dubose, *supra,* at 41.

Screen Readers Have Lower Attention Spans and Want Information Quickly

Because of the massive amount of available information on a screen and the lack of sufficient time actually to see it, "[w]eb users are impatient and insist on instant gratification." Vitaly Friedman, *10 Principles of Effective Web Design,* Smashing Magazine (Jan. 31, 2008).

Steve Krug's landmark book on web design is named for the key principle for writing to the new reader: "*Don't Make Me Think.*" Krug explains that when a user looks at a web page, "it should be self-evident. Obvious. Self-explanatory. I should be able to 'get it'—what it is and how to use it—without expending any effort thinking about it." Krug, *supra,* at 11. Rather than an attack on the intelligence of screen readers (which is generally high), this statement recognizes that they are simply busy, bombarded with multiple sources of information, and therefore eager to get the crux of the text without significant effort. Their reading method is on the other side of the spectrum from the method of "deep" reading.

So it is with this impatient screen reader, in a non-physical, distracting screen environment that legal writers must communicate more than ever. But persuasively conveying a complex legal argument is a daunting challenge for the legal writer—that is, if the manner in which the message is conveyed does not change.

The next part of this two-part series will set out suggestions for structuring an effective and persuasive legal argument to the screen reader. FD